ANTHI HELLENI POULOS
ATTORNEY AT LAW
9124 BELLS MILL ROAD
POTOMAC, MARYLAND 20854

(301) 299-9783

In the Matter of Request for Comments	)	
DA 99-1135, Reply Comments and	)	
DA 99-1049 Targeted Comments on Wireless	)	CC Docket 94-102
E911 Phase II Automatic Location	)	
Identification Requirements	)	

REPLY COMMENTS OF

METROCOM.COM., Inc.
Suite 311, Fort Lauderdale Jet Center
1100 Lee Wagner Boulevard
Ft. Lauderdale, FL 33315
(305) 935-9101

On behalf of *METROCOM.COM.Inc.*, I hereby file the accompanying comments (in both written and 3.5 floppy formats) on 2 July 1999, in response to FCC Public Notice, DA 99-1135 Reply Comments and FCC Public Notice DA 99-1135, WIRELESS TELECOMMUNICATIONS BUREAU REQUESTS TARGETED COMMENT ON WIRELESS E911 PHASE II AUTOMATIC LOCATION IDENTIFICATION REQUIREMENTS.

Anthi Poulos
Attorney at Law
9124 Bells Mill Road
Potomac, Maryland 20854
Tel: 301-299-9783

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DATE: July 2, 1999

EXECUTIVE SUMMARY

The following constitute the Reply Comments (including the Comments submitted 17 June 1999) of *METROCOM.COM, Inc.* to the FCC document referenced above, entitled "Compatibility of Wireless Services With Enhanced 911; Request for Comment on Wireless E911 Phase II Automatic Location Identification Requirements." Our Reply Comments (and Comments) emphasize the fact that technology exists to completely satisfy the FCC requirements for Phase II. Thus, no waivers are necessary nor required. In particular, handsets, of which there are 80 million in the United States today, can be accommodated without modification. Thus, they need not be replaced. Therefore to set a handset standard which would preclude other, more economical, more technologically superior, network solutions is just plain wrong. To plunge into a regulatory situation whereby the FCC is time-pressured into making unwise waivers and exceptions; and, more importantly, exclusionary standards that affect the rest of the industry; is not in the best long-term interests of the FCC nor of the cellular phone industry and certainly not of the public which it serves.

The following, numbered Comments correspond to the numbered paragraphs in the notice of Request for Comments, FCC Document 64 CFR 31530.

CC Docket No. 94-102;DA 99-1135

1. The Issue of Waivers
In our opinion, the current schedule for E911 Phase II is realistic and should be adhered to. The recent Technology Forum on 28 June 1999 served to solidify this opinion in that at least five (5) network-based E911 systems for Phase II are ready.

The Commission established very specific guidelines for cellular carriers and suppliers. When we asked for an interpretation we were referred to the Commission's statements. We have accepted these statements and are prepared to meet the requirements. We do not believe further clarification is necessary. This particularly applies to Phase II of the Commission order.

2. The Hand-set Approach
The technical requirements, while somewhat general in nature, do preserve the Commission's policy of neutrality where technology is involved and this policy should be continued.

METROCOM.COM offers a system that meets the Commission's requirements. Any cellular handset now in use will work on the *METROCOM* system including roaming. Handset turnover will drop as the market approaches saturation and consumers better understand cell phone use. It is a falsehood to represent that turnover will solve the problem of forcing the public to buy or obtain new phones to support a possible standard that would make 80 million phones obsolete. The return, if any, does not justify the cost to the public. An example of anticipated public reaction is the remarkably slow reduction in rotary dial phones over the past 20 years.

3. The Issues of varied deadlines for compliance and service
At least four (4) suppliers of Network-based equipment have indicated that the specification of 67% coverage with a 125 meter range can be met (This number includes *METROCOM*).

Technology to meet the Commission requirements is available now. It is not in the public interest to delay the E911 service for four years. Too many lives are at stake.

4. The issues of GPS technology and the SnapTrack proposed compliance standards
Without a doubt, the comments made at the June 28 Technology Forum confirm that continued improvements can, and will, be made in technology that will inevitably improve the E911 Phase II performance. The competitive world will assure this trend as has been the case with other communication technology.

We repeat - the delay is not justified. If the vendor can't get his engineering done on time he should be considered non-competitive. Location-capable handsets should be evaluated first on the bases on the coverage and the accuracy of their overall systems. When location-capable CC

handsets are included in a systems proposal, then the coverage maps or GPS penetration information needs to be included. It is widely accepted knowledge, and was confirmed at the Technology Forum, that GPS coverage is poor in cities, cars, tunnels, buildings, valleys, in pockets or on one's belt.

Therefore, with coverage so poor, handset proponents must justify and demonstrate how the public is served via a system with such a poor foundation; in advance of implementation, and not when the carrier plans to deploy the system.

5. The APCO proposal for conditions for handset application
No reliable evidence has been presented, at the Technology Forum of 28 June 1999 or earlier, that handset-based E911 Phase II works as required for the services. While GPC performs very well under defined conditions which involve direct sightings of the satellite, it is too limited for the required E911 Phase II applications.

We submit that solutions are available NOW to meet the Commission schedule. A four-year delay will cost too many lives. The deployment approach of any system is not relevant. The public interest is served if there is a clear migration path for technological change. The Commission has made many landmark decisions where the public interest was served, and technology progressed. The introduction of color television, Touch Tone telephones, and spectrum management issues have all been successful because hybrid technology was incorporated. There is no single point of failure in the system. Handset based location still depends on the GPS system to be operational. Will this always be true? There is sufficient opportunity in any Commission decision to encourage innovation and enhance competitiveness.

6. The issue of migration by cells and compatibility of handset and network-based technologies
The timing of the FCC mandated program is very important for the public needs. Consider the following critical facts.

a. 110,000 - 911 calls are received every day,
b. 30% or 33,000 calls are made from cell phones, and
c. data show that 1/3 of cell-phone 911-calls come from people who do not know where they are physically located.

An estimated 1% of the 911 phone calls are life threatening. Considering only the 911 cell phone calls, this equates to 12,045,000 calls per year of which 4,015,000 emanate from callers who do not know where they are. This data simply underscore the Commission's stated goal of timely completion of the program. The evolution of technology or migration path will solve this problem. If the Commission feels compelled to stipulate an improvement schedule, we're sure qualified vendors will cooperate in establishing such a schedule.

7. The question of necessity for changes in the Commission's time lines
We agree that the Commission can achieve its goals without any changes.

8. Evaluating the SnapTrack and APCO proposals
The proposals are not in keeping with the public interest. In addition, cellular companies who offer Phase II service will have an opportunity to offer numerous public safety services beyond the E911 program. It is improper to deprive the public of these services.

9. The potential interaction of Phase I location information with the handset system.
It would appear that the proponents of a handset based solution find it necessary to avoid or obfuscate several important factors relating to ordinary service requirements, especially roaming and legacy handsets, The roamer problem is here now and in volume and there is no assurance of so-called handset churn. It is unrealistic to rely on possible but not probable occurrences to solve this major problem. In our opinion the partial information the PSAPs would receive using just the Phase I information is of no value when the caller cannot indicate the location.

Any E911 Phase II system must serve all cell phones now out in the public's possession. A sizable segment of the public has purchased their handsets as a safety measure. They will be reluctant to pay added money for a new handset. This reluctance can and will stall any program involving new handsets or the modification of existing handsets (i.e., software change). Just issuing a call to all handset users to bring in their cell phones for a free modification will not produce the required results. Witness the success of auto manufacturers on recall. The experience is that many fail to heed recall notices. In the case of a cell phone, every phone must function for the Phase II program to be a success.

In addition, we see the following problems with the handset technology. There are 78 million handsets out now. By the time delivery of the new handsets with components proposed for E911 Phase II use can be made, the number of handsets will be about 100 million. The cost to someone will be about $10 billion. The cost and the results do not match. To believe the public will abandon their current handsets is illogical. It has not happened with Television or the rotary dial Telephones. Inevitably, the public will absorb the costs, regardless the system, but the network-based approach will be the most cost-effective to cell phone consumers, public safety organizations, and the public at large.

The overall intent and the mandate of the FCC Directive (CC 94-102) are to serve and protect the public when in peril. The potential loss of life exceeds US losses in the past two wars! We do not believe the public or the Congress will stand for unwarranted delay.

10. Potential for handset turnover

Concerns for public acceptance and purchase issues are compelling. The handset turnover issue deserves serious consideration. As the market becomes saturated, handset turnover will inevitably drop. The industry is rapidly passing the stage where the novelty or prestige of a new cell motivates purchase of a new handset. We are now in the era where the handset is a utility item. Size is the leading concern of purchasers and if the example presented by proponents of the handset technology (at the Technology Forum) is indicative, handset manufacturers will have problems marketing a cell phone twice the size as before.

Legacy handsets must be considered as the newer but larger phones are marketed. Would cell phone owners retrofit their cells? Proponents of the handset technology have not demonstrated that retrofitting would be an option. Older handsets must be considered when evaluating this program. In our opinion the cost would be too great and the time involved too long.

11. The Sprint proposal

We can not comment on the Sprint proposal except to note that it appears to offer a Band-Aid of questionable quality when a cheaper and better solution is at hand.

12. To compare CEP and RMS

CEP allows for larger peak errors than some RMS approaches.

13. Additional Comments

1. "Handset Churn"

The reported churn of handsets is 3 years. This is for 67 percent of the telephones. Caution should be exercised here. At least 5 times the time should be used for "reasonable" churn estimates. This means coverage may be adequate at 15 years from October 2001. Remember, there are still rotary telephones and black and white televisions in use today. The subscriber ultimately pays for any plan to accelerate the deployment of handsets. No acceleration should be considered.

2. Current Technology Exists

The FCC requirements with respect to positioning accuracy and frequency of determination [100 meters; 67% of the time] are attainable using current technology. *METROCOM.COM,* has a technical solution to this problem which employs a combination of proven and available technologies and procedures to obtain the accuracy specified within the probabilistic requirements of the FCC [100 meters; 67% of the time].

3. No Need to Modify Handsets

The claim that a new handset is required containing proprietary chips capable of determining location using a Global Positioning System is inapposite to current technological reality. The technological solution we have presently devised will employ transmissions from current hand-held sets as they exist, without the need for costly handset replacement.

4. Global Positioning System Alone is not the Answer

Although it can be shown that a Global Positioning System (GPS) can provide the location information specified under certain ideal conditions, even its proponents must readily admit that GPS does not work in any occluded area including tunnels; inside buildings; underneath trees; or, in fact, inside automobiles (unless, of course the automobile is an open convertible). The GPS receiver must be placed in a strategic position to enable it to receive transmissions from satellites without obstruction of buildings or other structures. Therefore, this solution is severely limited and must not be considered as the total solution to communications policy.

5. Current antennae can be used

In our system we make use of currently available receiving equipment that is in place and already installed by the cellular companies. Although new equipment will be added to it to implement our solution, no new towers need be built. Consequently the economics of employing a system such as ours is particularly attractive to the cellular companies - financially hard-pressed to justify the addition of more services with their correlative expense.

6. No Exclusive Standards need be set

It stands to reason that any setting of standards excluding other technologies is not only unfair, it prevents technological innovation and the pursuit of better, cheaper, more satisfactory solutions. To set, for example, a handset standard which would preclude other more economical, more technologically superior network solutions is just plain wrong.

7. Haste makes More than Waste

To plunge into a regulatory situation whereby the FCC is time-pressured into making unwise waivers and exceptions, and, more importantly, exclusionary standards that affect the rest of the industry is not in the best long-term interests of the FCC nor of the cellular phone industry and certainly not of the public which it serves.

CONCLUSION

Although *METROCOM* did not speak at the June 28 Technology Forum, we did participate by the presence in the audience of our Chairman, President and Chief Technology Officer. In addition, we filed brief remarks included here in response to the DD 99-1049 Request for Targeted Comments.

The following are based on *METROCOM*'s commitment to the E911 Phase II program.

1. We are prepared to meet the Commission's schedule.
2. We shall meet the current technical requirements.
3. *METROCOM*'s engineers have been designing and building location tracking equipment for 18 years for the Armed Forces and Security Agencies. Over 400 systems have been sold, designed, manufactured and installed.
4. In addition, *METROCOM* has teamed for engineering and manufacturing functions, with Watkins-Johnson Co. Telecommunications Group, widely recognized in this field since 1962.
5. Of prime importance, *METROCOM* equipment will work with any of the current modes such as GSM, TDMA, CDMA and AMP.
6. Any handset will work without handset modification.
7. The *METROCOM* system will handle roaming.
8. Our system is briefly summarized as follows.

The *METROCOM* system integrates system-derived information from these four approaches: Angle of Arrival; Signal Strength, Time Difference of Arrival; and Map Matching. The first three are straightforward and well-known techniques except that our approach is different and unique. The fourth involves a signal transmission survey of the geographical area covered by the system to map its reflective and other characteristics.

METROCOM recognizes the critical problem that exists between the cellular companies and the Public Service Answering Points (PSAPs). However, from the cellular companies' standpoint if a system as offered by *METROCOM* is installed, the cellular company has met the Commission's Phase II mandate.

METROCOM plans to release 6 new services as soon as the tracking system is installed over a reasonable geographic area. These are primarily safety oriented services. These services will produce income for the cellular companies as well as *METROCOM*. They will be managed from any one of 6 Control Centers to be built by *METROCOM* for that purpose. (Under study are 9 more services).

We view bringing the PSAPs into the E911 cellular systems as an essential public service. We believe that *METROCOM* can work with the PSAPs to bring the service into reality in less time and for less money than that contemplated by the cellular companies. There are of course costs involved. *METROCOM* hereby expresses an interest in handling the E911 Phase II work involved with connecting PSAPs with cellular companies using the network based location service. The technology and software are available for this project. The Cellular/PSAP connection can be quickly made by adding facilities to *METROCOM*'s planned control centers. We offer this as a possible solution for the cellular phone companies who are already overburdened with infrastructure problems and the PSAPs who are perplexed with the problems of taking on the cellular 911 calls.

In conclusion, we stress that we believe that *METROCOM* can bring the PSAPs into the cellular 911 system faster than the dates thus far proposed.

We stand ready to expand on our technology and will assist the FCC in researching these issues in order to reach a more informed and accurate opinion.

For questions, please address:

Mr. C. Gus Grant, Chairman
METROCOM.COM, Inc.
P.O. Box 2569
Carefree Arizona 85377
Telephone: (602) 488-1467